

RESPONSE TO OFFICE ACTION
Serial No. 09/519,719
Page 2 of 28

IN THE CLAIMS

11. (Currently Amended) A semiconductor processing chamber comprising:
a chamber body having a wall, a bottom and a lid assembly defining a chamber volume;
a substrate support disposed within the chamber volume; and,
a chamber liner disposed in the chamber volume and ~~circumscribing the substrate support, the chamber liner having a passage at least partially disposed in the chamber liner, the passage having a base substantially covering the bottom of the chamber body, the base having a substantially annular passage formed therein and~~ fluidly isolated from the chamber volume, ~~and the base having an inlet and outlet adapted to flow~~ circulate a fluid through the passage.
12. (Original) The chamber of claim 11 wherein the chamber liner further comprises at least one of:
a first liner disposed proximate the lid assembly; or
a second liner disposed about the substrate support.
13. (Currently Amended) The chamber of claim 11 wherein the chamber liner is retained in the chamber by a clamp affixed to the chamber body.
14. (Original) The chamber of claim 11 wherein the chamber liner is comprised of a thermally conductive material.
15. (Original) The chamber of claim 11 wherein the chamber liner is comprised of a material selected from the group of aluminum, ceramic and stainless steel.
16. (Currently Amended) The apparatus of claim 12 wherein the second liner further comprises:
~~a base having the passage disposed within; and~~

RESPONSE TO OFFICE ACTION

Serial N . 09/519,719

Page 3 of 28

an inner wall connected to the base .

17. (Currently Amended) The apparatus of claim 46 11 wherein the second chamber liner further comprises:

an outer wall connected to an outer edge of the base and extending upwards against the wall of the chamber body.

18. (Currently Amended) The apparatus of claim 46 11 wherein the second chamber liner further comprises:

a first and second boss projecting from the base, the first boss comprising a hole in fluid communication with the passage at the inlet, and the second boss comprising a hole in fluid communication with the passage at the outlet.

19. (Original) The apparatus of claim 16 wherein inner wall further comprises a magnet disposed in the inner wall.

20. (Original) The apparatus of claim 17 wherein the outer wall further comprises a pumping port.

21. (Currently Amended) The apparatus of claim 42 11 wherein the first chamber liner further comprises:

an inner wall connected to an inner edge of the base and extending upwards against the substrate support;

an outer wall connected to an outer edge of the base and extending upwards against the wall of the chamber body;

a center member having the passage disposed within;

a flange circumscribing the center member; and,

a cylindrical wall projecting from the center member inside of the flange.

RESPONSE TO OFFICE ACTION
Serial N . 09/519,719
Page 4 of 28

22. (Original) The apparatus of claim 21 further comprising:
a lid disposed opposite the cylindrical wall, the lid and the wall defining a plenum at least partially therebetween.
23. (Original) The apparatus of claim 22 wherein the center member further comprises:
a plurality of nozzles disposed in the center member providing fluid access to the plenum.
24. (Original) The apparatus of claim 22 further comprising:
a gas feedthrough fluidly coupled to the plenum through a hole disposed in the lid.
25. (Cancelled) Apparatus for lining a semiconductor processing chamber comprising:
a liner having a plurality of apertures formed at least partially therein; and
a lid having an inlet, the lid disposed proximate the liner and defining a plenum at least partially therebetween.
26. (Currently Amended) Apparatus for lining a semiconductor processing chamber comprising:
a lid having an inlet;
a liner disposed proximate the lid, the liner having:
a first portion having a base substantially covering a bottom of a chamber body and an outer wall disposed proximate a wall of the chamber body;
a second portion disposed proximate a lid of the chamber body and having a second portion wall extending downward along the wall of the chamber body to the outer wall of the first portion of the liner; and
a plurality of apertures formed at least partially therein in the second portion of the liner;

RESPONSE TO OFFICE ACTION

Serial No. 09/519,719

Page 5 of 28

~~a lid having an inlet, the lid disposed proximate the liner and defining a plenum at least partially therebetween~~ defined between the lid and the second portion of the liner; and

a nozzle disposed in at least one of apertures for flowing fluid from the plenum through the second portion of the liner.

27. (Original) The apparatus of claim 26, wherein the nozzle is comprised of quartz, silicon carbide, silicon, aluminum nitride, aluminum oxide or combinations thereof.

28. (Original) The apparatus of claim 26, wherein the liner further comprises:
a channel having an inlet and an outlet disposed in the liner.

37. (Previously Amended) The apparatus of claim 26, wherein the a second side of the liner is textured.

38. (Currently Amended) Apparatus for lining a process volume defined by sidewalls of a semiconductor processing chamber comprising:

a liner adapted to be removably disposed in the process volume, the liner comprising:

an outer cylindrical wall configured to line the sidewalls of the chamber;

an inner cylindrical wall configured to line a substrate support disposed in the process volume of the chamber;

a bottom coupled between the outer cylindrical wall and the inner cylindrical wall; and

a passage at least partially formed in the liner and isolated from the process volume, the passage being ~~and~~ adapted to flow a heat transfer medium therethrough.

RESPONSE TO OFFICE ACTION

Serial No. 09/519,719

Page 6 of 28

39. (Cancelled) The apparatus of claim 38, wherein the liner further comprises:

a cylindrical wall.

40. (Currently Amended) The apparatus of claim ~~39~~ 38, wherein the passage is formed at least partially in the cylindrical wall.

41. (Cancelled) The apparatus of claim 39, wherein the liner further comprises:

a bottom coupled to the cylindrical wall.

42. (Currently Amended) The apparatus of claim ~~44~~ 38, wherein the passage is formed at least partially in the bottom.

43. (Cancelled) The apparatus of claim 39, wherein the cylindrical wall is configured to line the sidewalls to the chamber.

44. (Cancelled) The apparatus of claim 39, wherein the cylindrical wall is configured to line a substrate support disposed in the process volume of the chamber.

45. (Cancelled) The apparatus of claim 38, wherein the liner further comprises:

an outer cylindrical wall;

an inner cylindrical wall; and

a bottom coupled between the outer cylindrical wall and the inner cylindrical wall.

46. (Cancelled) The apparatus of claim 45, wherein the passage is formed in at least partially in at least one of the inner cylindrical wall, outer cylindrical wall and the bottom.

RESPONSE TO OFFICE ACTION
Serial No. 09/519,719
Page 7 of 28

47. (Currently Amended) A semiconductor processing chamber comprising:
a chamber body having a wall, a bottom and a lid assembly defining a
chamber volume;

a substrate support disposed within the chamber volume; and,

a chamber liner having at least a first portion having a base substantially
covering the bottom of the chamber body and an outer wall disposed proximate
the wall of the chamber body, the chamber liner having a passage fluidly isolated
from the chamber volume at least partially formed in the chamber liner and
adapted to circulate a heat transfer medium therethrough.

48. (Currently Amended) The chamber of claim 47, wherein the chamber liner
further comprises:

a second portion disposed proximate the lid assembly and having a
second portion wall extending downward along the wall of the chamber body to
the outer wall of the first portion of the liner and a cover closing one end of the
second portion wall.

49. (Currently Amended) The chamber of claim 48, wherein the cover of the
second portion of the chamber liner further comprises:

a plurality of apertures formed therethrough.

50. (Previously Added) The chamber of claim 49 further comprising a plate
disposed on the chamber liner and forming a plenum therewith, the plenum in
fluid communication with the chamber volume through the apertures.

51. (Currently Amended) A semiconductor processing chamber comprising:
a chamber body having a wall, a bottom and a lid assembly defining a
chamber volume;

a substrate support disposed within the chamber volume; and,

RESPONSE TO OFFICE ACTION
Serial No. 09/519,719
Page 8 of 28

a chamber liner circumscribing disposed against a vertical portion of the substrate support, the chamber liner having a passage fluidly isolated from the chamber volume at least partially formed in the chamber liner.

52. (Currently Amended) Apparatus for lining a chamber volume of a semiconductor processing chamber, comprising:

a liner a cylindrical wall having an upper end closed by a top member, the cylindrical wall adapted to line a portion of the chamber volume;

a plurality of apertures formed at least partially therein in the top member;

a passage at least partially formed in the liner top member and fluidly isolated from the chamber volume; and

a nozzle disposed in at least one of the apertures.

53. (New) A semiconductor processing chamber comprising:

a wall, a bottom and a lid assembly defining a chamber volume;

a substrate support disposed within the chamber volume; and

a chamber liner circumscribing the substrate support and adapted to be removably disposed in the chamber volume, the liner comprising:

an outer cylindrical wall configured to line the wall of the chamber;

an inner cylindrical wall configured to line the substrate support;

a bottom connecting the outer cylindrical wall and the inner cylindrical wall; and

a passage disposed between the liner and the chamber wall, the passage being fluidly isolated from the chamber volume and having an inlet and an outlet adapted to circulate a heat transfer medium therethrough.

54. (New) The apparatus of claim 38, wherein the inner wall further comprises a magnet disposed in the inner wall.

RESPONSE TO OFFICE ACTION
Serial No. 09/519,719
Page 9 of 28

55. (New) The apparatus of claim 47, wherein the chamber liner further comprises an inner wall extending from the base inward of the outer wall.
56. (New) The processing chamber of claim 55, wherein the inner wall further comprises a magnet disposed therein.
57. (New) The processing chamber of claim 51, wherein the chamber liner further comprises a magnet disposed therein.
58. (New) The processing chamber of claim 53, wherein the inner cylindrical wall further comprises a magnet disposed therein.